SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (i) APPLICANT: GUERIN-MARCHAND, Claudine DRUILHE, Pierre
- (ii) TITLE OF INVENTION: PEPTIDE SEQUENCES SPECIFIC FOR THE HEPATIC STAGES OF P. FALCIPARUM BEARING EPITOPES CAPABLE OF STIMULATING THE T LYMPHOCYTES
- (iii) NUMBER OF SEQUENCES: 46
- (iv) CORRESPONDENCE ADDRESS:
 - (A) ADDRESSEE: Burns, Doane, Swecker & Mathis
 - (B) STREET: P.O. Box 1404
 - (C) CITY: Alexandria
 - (D) STATE: Virginia (E) COUNTRY: United States
- (F) ZIP: 22313-1404
- (v) COMPUTER READABLE FORM:
- (A) MEDIUM TYPE: Floppy disk
- (B) COMPUTER: IBM PC compatible
- W (C) OPERATING SYSTEM: PC-DOS/MS-DOS
 - (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
- (Vi) CURRENT APPLICATION DATA:
- (A) APPLICATION NUMBER: US 08/462,625
- (B) FILING DATE: 05-JUN-1995
- Ŀ (C) CLASSIFICATION:
- (Vii) PRIOR APPLICATION DATA:
 - (A) APPLICATION NUMBER: US 08/098.327
 - (B) FILING DATE: 24-NOV-1993
- (vii) PRIOR APPLICATION DATA:
 - (A) APPLICATION NUMBER: FR 91 01286
 - (B) FILING DATE: 05-FEB-1991
- (viii) ATTORNEY/AGENT INFORMATION:
 - (A) NAME: McGowan, Malcolm K.
 - (B) REGISTRATION NUMBER: 39,300
 - (C) REFERENCE/DOCKET NUMBER: 010830-078
 - (ix) TELECOMMUNICATION INFORMATION:
 - (A) TELEPHONE: (703) 836-6620
 - (B) TELEFAX: (703) 836-2021
- (2) INFORMATION FOR SEQ ID NO:1:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 17 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single

- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 8
 - (D) OTHER INFORMATION: /note= "Amino Acid 8 wherein Xaa is Glu or Glv."
- (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Leu Ala Lys Glu Lys Leu Gln Xaa Gln Gln Ser Asp Leu Glu Gln Glu

15

Arg

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- (2) INFORMATION FOR SEQ ID NO:2:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 17 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - Tii) MOLECULE TYPE: peptide
 - (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 1
 - (D) OTHER INFORMATION: /note= "Amino Acid 1 wherein Xaa is Ser or Arg."
 - (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 6
 - (D) OTHER INFORMATION: /note= "Amino Acid 6 wherein Xaa is Glu or Asp."
 - (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 8
 - (D) OTHER INFORMATION: /note= "Amino Acid 8 wherein Xaa is Arg or Leu."
 - (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 15
 - (D) OTHER INFORMATION: /note= "Amino Acid 15 wherein Xaa is Glu or Gly."
 - (x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Xaa Asp Leu Glu Gln Xaa Arg Xaa Ala Lys Glu Lys Leu Gln Xaa Gln

Gln

(2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 17 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 2
 - (D) OTHER INFORMATION: /note= "Amino Acid 2 wherein Xaa is Ser or Arg."
 - (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 7
 - (D) OTHER INFORMATION: /note= "Amino Acid 7 wherein Xaa is Glu or Asp."
- (ix) FEATURE:

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- (A) NAME/KEY: Peptide
- (B) LOCATION: 9
- (D) OTHER INFORMATION: /note= "Amino Acid 9 wherein Xaa is Arg or Leu."
- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 16
 - (D) OTHER INFORMATION: /note= "Amino Acid 16 wherein Xaa is Glu or Gly."
- (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:
- Gln Xaa Asp Leu Glu Gln Xaa Arg Xaa Ala Lys Glu Lys Leu Gln Xaa 1

Gln

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 17 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (ix) FEATURE: (A) NAME/KEY: Peptide (B) LOCATION: 3 (D) OTHER INFORMATION: /note= "Amino Acid 3 wherein Xaa is Ser or Arg." (ix) FEATURE: (A) NAME/KEY: Peptide (B) LOCATION: 8 (D) OTHER INFORMATION: /note= "Amino Acid 8 wherein Xaa is Glu or Asp." ₫ (ix) FEATURE: (A) NAME/KEY: Peptide (B) LOCATION: 10 (D) OTHER INFORMATION: /note= "Amino Acid 10 wherein Xaa is Arg or Leu." (ix) FEATURE: (A) NAME/KEY: Peptide (B) LOCATION: 17 (D) OTHER INFORMATION: /note= "Amino Acid 17 wherein Xaa is Glu or Gly." (x) PUBLICATION INFORMATION: (H) DOCUMENT NUMBER: WO 92/13884 (J) PUBLICATION DATE: 20-AUG-1992 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:4: Gln Gln Xaa Asp Leu Glu Gln Xaa Arg Xaa Ala Lys Glu Lys Leu Gln Xaa (2) INFORMATION FOR SEQ ID NO:5: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 17 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (ix) FEATURE: (A) NAME/KEY: Peptide

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(B) LOCATION: 1

(D) OTHER INFORMATION: /note= "Amino Acid 1 wherein Xaa is Glu or Gly."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 4
- (D) OTHER INFORMATION: /note= "Amino Acid 4 wherein Xaa is Ser or Arg."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 9
- (D) OTHER INFORMATION: /note= "Amino Acid 9 wherein Xaa is Glu or Asp."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 11
- (D) OTHER INFORMATION: /note= "Amino Acid 11 wherein Xaa is Arg or Leu."

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Xaa Gln Gln Xaa Asp Leu Glu Gln Xaa Arg Xaa Ala Lys Glu Lys Leu 1 10 15

Gln

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(2 INFORMATION FOR SEQ ID NO:6:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 17 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 2
 - (D) OTHER INFORMATION: /note= "Amino Acid 2 wherein Xaa is Glu or Gly."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 5
- (D) OTHER INFORMATION: /note= "Amino Acid 5 wherein Xaa is Ser or Arg."
- (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 10
- (D) OTHER INFORMATION: /note= "Amino Acid 10 wherein Xaa is Glu or Asp."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 12
- (D) OTHER INFORMATION: /note= "Amino Acid 12 wherein Xaa is Arg or Leu."

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992
- (xi) SEQUENCE DESCRIPTION: SEO ID NO:6:

Gln Xaa Gln Gln Xaa Asp Leu Glu Gln Xaa Arg Xaa Ala Lys Glu Lys 1 10 15

₫ Leu

(2) INFORMATION FOR SEQ ID NO:7:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 17 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /note= "Amino Acid 3 wherein Xaa is Glu or Gly."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 6
- (D) OTHER INFORMATION: /note= "Amino Acid 6 wherein Xaa is Ser or Arg."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 11
- (D) OTHER INFORMATION: /note= "Amino Acid 11 wherein Xaa is Glu or Asp."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 13
- (D) OTHER INFORMATION: /note= "Amino Acid 13 wherein Xaa is Arg or Leu."

- (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Leu Gln Xaa Gln Gln Xaa Asp Leu Glu Gln Xaa Arg Xaa Ala Lys Glu 1 5 10 15

Lys

- (2) INFORMATION FOR SEQ ID NO:8:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 17 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (ix) FEATURE:

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- (A) NAME/KEY: Peptide
- (B) LOCATION: 4
- (D) OTHER INFORMATION: /note= "Amino Acid 4 wherein Xaa is Glu or Gly."
- (ix) FEATURE:
 (A) NAM
 (B) LOC
 (D) OTH
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 7
 - (D) OTHER INFORMATION: /note= "Amino Acid 7 wherein Xaa is Ser or Arg."
- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 12
 - (D) OTHER INFORMATION: /note= "Amino Acid 12 wherein Xaa is Glu or Asp."
 - (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 14
 - (D) OTHER INFORMATION: /note= "Amino Acid 14 wherein Xaa is Arg or Leu."
 - (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Lys Leu Gln Xaa Gln Gln Xaa Asp Leu Glu Gln Xaa Arg Xaa Ala Lys

10
15

Glu

(2) INFORMATION FOR SEQ ID NO:9: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 17 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (ix) FEATURE: (A) NAME/KEY: Peptide (B) LOCATION: 5 (D) OTHER INFORMATION: /note= "Amino Acid 5 wherein Xaa is Glu or Gly." (ix) FEATURE: (A) NAME/KEY: Peptide (B) LOCATION: 8 (D) OTHER INFORMATION: /note= "Amino Acid 8 wherein Xaa is 0. Ser or Arg." Ö (ix) FEATURE: (A) NAME/KEY: Peptide (B) LOCATION: 13 (D) OTHER INFORMATION: /note= "Amino Acid 13 wherein Xaa is Glu or Asp." (ix) FEATURE: (A) NAME/KEY: Peptide Ŧ (B) LOCATION: 15 (D) OTHER INFORMATION: /note= "Amino Acid 15 wherein Xaa 1 ø is Arg or Leu." (x) PUBLICATION INFORMATION: (H) DOCUMENT NUMBER: WO 92/13884 (J) PUBLICATION DATE: 20-AUG-1992 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:9: Glu Lys Leu Gln Xaa Gln Gln Xaa Asp Leu Glu Gln Xaa Arg Xaa Ala 10 Lys (2) INFORMATION FOR SEQ ID NO:10: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 17 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear

(ix) FEATURE:

(ii) MOLECULE TYPE: peptide

(A) NAME/KEY: Peptide (B) LOCATION: 6 (D) OTHER INFORMATION: /note= "Amino Acid 6 wherein Xaa is Glu or Gly." (ix) FEATURE: (A) NAME/KEY: Peptide (B) LOCATION: 9 (D) OTHER INFORMATION: /note= "Amino Acid 9 wherein Xaa is Ser or Arg." (ix) FEATURE: (A) NAME/KEY: Peptide (B) LOCATION: 14 (D) OTHER INFORMATION: /note= "Amino Acid 14 wherein Xaa is Glu or Asp." (ix) FEATURE: (A) NAME/KEY: Peptide (B) LOCATION: 16 (D) OTHER INFORMATION: /note= "Amino Acid 16 wherein Xaa is Arg or Leu." (x) PUBLICATION INFORMATION: (H) DOCUMENT NUMBER: WO 92/13884 (J) PUBLICATION DATE: 20-AUG-1992 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:10: Lys Glu Lys Leu Gln Xaa Gln Gln Xaa Asp Leu Glu Gln Xaa Arg Xaa 10 Ala (2) INFORMATION FOR SEQ ID NO:11: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 17 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (ix) FEATURE: (A) NAME/KEY: Peptide (B) LOCATION: 7 (D) OTHER INFORMATION: /note= "Amino Acid 7 wherein Xaa is Glu or Gly."

(D) OTHER INFORMATION: /note= "Amino Acid 10 wherein Xaa

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(ix) FEATURE:

(A) NAME/KEY: Peptide (B) LOCATION: 10

is Ser or Arg."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 15
- (D) OTHER INFORMATION: /note= "Amino Acid 15 wherein Xaa is Glu or Asp."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 17
- (D) OTHER INFORMATION: /note= "Amino Acid 17 wherein Xaa is Arg or Leu."

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Ala Lys Glu Lys Leu Gln Xaa Gln Gln Xaa Asp Leu Glu Gln Xaa Arg 1 10 15

Xaa

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(2) INFORMATION FOR SEQ ID NO:12:

- - (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 17 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide

☐ (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1
- (D) OTHER INFORMATION: /note= "Amino Acid 1 wherein Xaa is Arg or Leu."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 8
- (D) OTHER INFORMATION: /note= "Amino Acid 8 wherein Xaa is Glu or Gly."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 11
- (D) OTHER INFORMATION: /note= "Amino Acid 11 wherein Xaa is Ser or Arg."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 16
- (D) OTHER INFORMATION: /note= "Amino Acid 16 wherein Xaa is Glu or Asp."

- (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Xaa Ala Lys Glu Lys Leu Gln Xaa Gln Gln Xaa Asp Leu Glu Gln Xaa 5

Arq

(2) INFORMATION FOR SEQ ID NO:13:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 17 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

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- (A) NAME/KEY: Peptide
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /note= "Amino Acid 2 wherein Xaa is Arg or Leu."
- - (A) NAME/KEY: Peptide
 - (B) LOCATION: 9
- (B) LOC.

 (C) OTH

 (ix) FEATURE:

 (A) NAM

 (B) LOC.

 (B) LOC. (D) OTHER INFORMATION: /note= "Amino Acid 9 wherein Xaa is Glu or Glv."
- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 12
 - (D) OTHER INFORMATION: /note= "Amino Acid 12 wherein Xaa is Ser or Arg."
 - (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 17
 - (D) OTHER INFORMATION: /note= "Amino Acid 17 wherein Xaa is Glu or Asp."
 - (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

Arg Xaa Ala Lys Glu Lys Leu Gln Xaa Gln Gln Xaa Asp Leu Glu Gln

Xaa

(2) INFORMATION FOR SEQ ID NO:14: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 17 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (ix) FEATURE: (A) NAME/KEY: Peptide (B) LOCATION: 1 (D) OTHER INFORMATION: /note= "Amino Acid 1 wherein Xaa is Glu or Asp." (ix) FEATURE: (A) NAME/KEY: Peptide (B) LOCATION: 3 (D) OTHER INFORMATION: /note= "Amino Acid 3 wherein Xaa is Arg or Leu." Ð M (ix) FEATURE: (A) NAME/KEY: Peptide (B) LOCATION: 10 (D) OTHER INFORMATION: /note= "Amino Acid 10 wherein Xaa is Glu or Gly." (ix) FEATURE: C (A) NAME/KEY: Peptide Ξ (B) LOCATION: 13 Ė (D) OTHER INFORMATION: /note= "Amino Acid 13 wherein Xaa ŭ is Ser or Arg." (x) PUBLICATION INFORMATION: (H) DOCUMENT NUMBER: WO 92/13884 (J) PUBLICATION DATE: 20-AUG-1992 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:14: Xaa Arg Xaa Ala Lys Glu Lys Leu Gln Xaa Gln Gln Xaa Asp Leu Glu Gln (2) INFORMATION FOR SEQ ID NO:15: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 17 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear

(ix) FEATURE:

(ii) MOLECULE TYPE: peptide

- (A) NAME/KEY: Peptide
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /note= "Amino Acid 2 wherein Xaa is Glu or Asp."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 4
- (D) OTHER INFORMATION: /note= "Amino Acid 4 wherein Xaa is Arg or Leu."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 11
- (D) OTHER INFORMATION: /note= "Amino Acid 11 wherein Xaa is Glu or Gly."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 14
- (D) OTHER INFORMATION: /note= "Amino Acid 14 wherein Xaa is Ser or Arg."

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Gln Xaa Arg Xaa Ala Lys Glu Lys Leu Gln Xaa Gln Gln Xaa Asp Leu 10

ď Glu

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(2) INFORMATION FOR SEQ ID NO:16:

- - (A) LENGTH: 17 amino acids
 - (i) SEQUENCE CHARACTERISTICS:
 - (B) TYPE: amino acid (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /note= "Amino Acid 3 wherein Xaa is Glu or Asp."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 5
- (D) OTHER INFORMATION: /note= "Amino Acid 5 wherein Xaa is Arg or Leu."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 12
- (D) OTHER INFORMATION: /note= "Amino Acid 12 wherein Xaa is Glu or Gly."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 15
- (D) OTHER INFORMATION: /note= "Amino Acid 15 wherein Xaa is Ser or Arg."

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Glu Gln Xaa Arg Xaa Ala Lys Glu Lys Leu Gln Xaa Gln Gln Xaa Asp 1 10 15

Leu

(2) INFORMATION FOR SEQ ID NO:17:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 17 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 4
- (D) OTHER INFORMATION: /note= "Amino Acid 4 wherein Xaa is Glu or Asp."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 6
- (D) OTHER INFORMATION: /note= "Amino Acid 6 wherein Xaa is Arg or Leu."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 13
- (D) OTHER INFORMATION: /note= "Amino Acid 13 wherein Xaa is Glu or Gly."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 16
- (D) OTHER INFORMATION: /note= "Amino Acid 16 wherein Xaa is Ser or Arg."

- (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

Leu Glu Gln Xaa Arg Xaa Ala Lys Glu Lys Leu Gln Xaa Gln Gln Xaa 1 5 10 15

Asp

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IJ

(2) INFORMATION FOR SEQ ID NO:18:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 17 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
 - (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 5
 - (D) OTHER INFORMATION: /note= "Amino Acid 5 wherein Xaa is Glu or Asp."
- ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 7
 - (D) OTHER INFORMATION: /note= "Amino Acid 7 wherein Xaa is Arg or Leu."
- (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 14
 - (D) OTHER INFORMATION: /note= "Amino Acid 14 wherein Xaa is Glu or Gly."
 - (ix) FEATURE:
 - (A) NAME/KEY: Peptide
 - (B) LOCATION: 17
 - (D) OTHER INFORMATION: /note= "Amino Acid 17 wherein Xaa is Ser or Arg."
 - (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
 - (xi) SEQUENCE DESCRIPTION: SEO ID NO:18:

Asp Leu Glu Gln Xaa Arg Xaa Ala Lys Glu Lys Leu Gln Xaa Gln Gln 1 10 15

Xaa

(2) INFORMATION FOR SEQ ID NO:19:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 107 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

- (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

Arg Lys Ala Asp Thr Lys Lys Asn Leu Glu Arg Lys Lys Glu His Gly
1 5 10 15

🖀 Asp Ile Leu Ala Glu Asp Leu Tyr Gly Arg Leu Glu Ile Pro Ala Ile 🖟 20 25 30

Glu Leu Pro Ser Glu Asn Glu Arg Gly Tyr Tyr Ile Pro His Gln Ser

Ser Leu Pro Gln Asp Asn Arg Gly Asn Ser Arg Asp Ser Lys Glu Ile

Ser Ile Ile Glu Lys Thr Asn Arg Glu Ser Ile Thr Thr Asn Val Glu 65 70 75 80

부 Gly Arg Arg Asp Ile His Lys Gly His Leu Glu Glu Lys Lys Asp Gly 회 85 90 95

Ser Ile Lys Pro Glu Gln Lys Glu Asp Lys Ser

(2) INFORMATION FOR SEQ ID NO:20:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 117 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

Leu Gln Glu Gln Arg Asp Leu Glu Gln Arg Lys Ala Asp Thr Lys 5 10 15 Lys Asn Leu Glu Arg Lys Lys Glu His Gly Asp Ile Leu Ala Glu Asp 20 25 30

Leu Tyr Gly Arg Leu Glu Ile Pro Ala Ile Glu Leu Pro Ser Glu Asn 35 40 45

Glu Arg Gly Tyr Tyr Ile Pro His Gln Ser Ser Leu Pro Gln Asp Asn 50 55 60

Arg Gly Asn Ser Arg Asp Ser Lys Glu Ile Ser Ile Ile Glu Lys Thr 65 70 75 80

Asn Arg Glu Ser Ile Thr Thr Asn Val Glu Gly Arg Arg Asp Ile His 85 90 95

Lys Gly His Leu Glu Glu Lys Lys Asp Gly Ser Ile Lys Pro Glu Gln
100 105 110

Lys Glu Asp Lys Ser 115

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√☐ (2) ∰INFORMATION FOR SEQ ID NO:21:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 27 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- \Box (ii) MOLECULE TYPE: peptide
 - (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Asp Thr Lys Lys Asn Leu Glu Arg Lys Glu His Gly Asp Ile Leu
1 5 10 15

Ala Glu Asp Leu Tyr Gly Arg Leu Glu Ile Pro 20 25

(2) INFORMATION FOR SEQ ID NO:22:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 24 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

- (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Arg Asp Leu Glu 1 5 10 15

Gln Arg Lys Ala Asp Thr Lys Lys

(2) INFORMATION FOR SEQ ID NO:23:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide

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- (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

 $\stackrel{\mathbb{H}}{\stackrel{\circ}{\stackrel{\circ}{\stackrel{\circ}{\circ}}}}$ Asn Ser Arg Asp Ser Lys Glu Ile Ser Ile Ile Glu Lys Thr Asn Arg $\stackrel{\mathbb{H}}{\stackrel{\circ}{\stackrel{\circ}{\circ}}}$ 1 5 10

Glu Ser Ile Thr Thr Asn Val Glu Gly Arg Arg Asp Ile His Lys

- (2) INFORMATION FOR SEQ ID NO:24:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 151 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Arg Asp Glu Leu Phe Asn Glu Leu Leu Asn Ser Val Asp Val Asn Gly

1 5 10 15

Glu Val Lys Glu Asn Ile Leu Glu Glu Ser Gln Val Asn Asp Asp Ile 20 25 30

Phe Asn Ser Leu Val Lys Ser Val Gln Gln Gln Gln His Asn Val
35 40 45

Glu Glu Lys Val Glu Glu Ser Val Glu Glu Asn Asp Glu Glu Ser Val 50 55 60

Glu Glu Asn Val Glu Glu Asn Val Glu Glu Asn Asp Asp Gly Ser Val 65 70 75 80

Ala Ser Ser Val Glu Glu Ser Ile Ala Ser Ser Val Asp Glu Ser Ile 85 90 95

Asp Ser Ser Ile Glu Glu Asn Val Ala Pro Thr Val Glu Glu Ile Val
100 105 110

Ala Pro Thr Val Glu Glu Ile Val Ala Pro Ser Val Val Glu Lys Cys 115 120 125

Ala Pro Ser Val Glu Glu Ser Val Ala Pro Ser Val Glu Glu Ser Val 130 135 140

Ala Glu Met Leu Lys Glu Arg

(2) INFORMATION FOR SEQ ID NO:25:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 47 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - ii) MOLECULE TYPE: peptide

- (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Arg Asp Glu Leu Phe Asn Glu Leu Leu Asn Ser Val Asp Val Asn Gly

Glu Val Lys Glu Asn Ile Leu Glu Glu Ser Gln Val Asn Asp Asp Ile
20 25 30

Phe Asn Ser Leu Val Lys Ser Val Gln Gln Gln Gln His Asn 35 40 45

(2) INFORMATION FOR SEQ ID NO:26:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 26 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide

- (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Asp Glu Leu Phe Asn Glu Leu Leu Asn Ser Val Asp Val Asn Gly Glu

15

Val Lys Glu Asn Ile Leu Glu Glu Ser Gln 20 25

- (2) INFORMATION FOR SEQ ID NO:27:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 27 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - in (ii) MOLECULE TYPE: peptide

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- (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:
- Leu Glu Glu Ser Gln Val Asn Asp Asp Ile Phe Ser Asn Ser Leu Val
 1
 5
 10
 15

上 Lys Ser Val Gln Gln Gln Gln His Asn Val ① 20 25

- (2) INFORMATION FOR SEQ ID NO:28:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 27 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Val Glu Lys Cys Ala Pro Ser Val Glu Glu Ser Val Ala Pro Ser Val 1 5 10

Glu Glu Ser Val Ala Glu Met Leu Lys Glu Arg

(2) INFORMATION FOR SEQ ID NO:29:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 17 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
(ii) MOLECULE TYPE: DNA (genomic)	
(x) PUBLICATION INFORMATION:(H) DOCUMENT NUMBER: WO 92/13884(J) PUBLICATION DATE: 20-AUG-1992	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:	
TTGTTCTAGA TCGCTTT	17
(2) INFORMATION FOR SEQ ID NO:30:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 15 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
Hii) MOLECULE TYPE: DNA (genomic)	
(x) PUBLICATION INFORMATION: (H) DOCUMENT NUMBER: WO 92/13884 (J) PUBLICATION DATE: 20-AUG-1992	
xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:	
AAGAAGATA AATCT	15
2) INFORMATION FOR SEQ ID NO:31: ($\int d\eta$.	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 316 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	
(ii) MOLECULE TYPE: peptide	
(x) PUBLICATION INFORMATION: (H) DOCUMENT NUMBER: WO 92/13884 (J) PUBLICATION DATE: 20-AUG-1992	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:	
Ser Asp Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln 1 5 10 15	

Gln Ser Asp Leu Glu Gln Asp Arg Leu Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Asp Arg Leu Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala 🗓 Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Ţ 145 Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Şer Asp Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys Leu Gln Glu Gln Gln Arg Asp Leu Glu Gln Arg Lys Ala Asp Thr Lys Lys Asn Leu Glu Arg Lys Lys Glu His Gly Asp Ile Leu Ala Glu Asp Leu Tyr Gly Arg Leu Glu Ile Pro Ala 225 Ile Glu Leu Pro Ser Glu Asn Glu Arg Gly Tyr Tyr Ile Pro His Gln Ser Ser Leu Pro Gln Asp Asn Arg Gly Asn Ser Arg Asp Ser Lys Glu Ile Ser Ile Ile Glu Lys Thr Asn Arg Glu Ser Ile Thr Thr Asn Val 275 280 Glu Gly Arg Arg Asp Ile His Lys Gly His Leu Glu Glu Lys Lys Asp Gly Ser Ile Lys Pro Glu Gln Lys Glu Asp Lys Ser 305 310

(2) INFORMATION FOR SEQ ID NO:32:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 950 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: DNA (genomic)
 - (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

				•		
AAAGCGATCT	AGAACAAGAG	AGACGTGCTA	AAGAAAAGTT	GCAAGAACAA	CAAAGCGATT	60
TAGAACAAGA	TAGACTTGCT	AAAGAAAAGT	TACAAGAGCA	GCAAAGCGAT	TTAGAACAAG	120
AGAGACTTGC	TAAAGAAAAG	TTGCAAGAAC	AACAAAGCGA	TCTAGAACAA	GAGAGACGTG	180
	GTTGCAAGAA	CAACAAAGCG	ATTTAGAACA	AGAGAGACGT	GCTAAAGAAA	240
AGTTGCAAGA	ACAACAAAGC	GATTTAGAAC	AAGATAGACT	TGCTAAAGAA	AAGTTACAAG	300
AGCAGCAAAG	CGATTTAGAA	CAAGAGAGAC	GTGCTAAAGA	AAAGTTGCAA	GAACAACAAA	360
GCGATTTAGA	ACAAGAGAGA	CGTGCTAAAG	AAAAGTTGCA	AGAACAACAA	AGCGATTTAG	420
AACAAGAGAG	ACTTGCTAAA	GAAAAGTTGC	AAGAACAACA	AAGCGATTTA	GAACAAGAGA	480
GACGTGCTAA	AGAAAAGTTG	CAAGAACAAC	AAAGCGATTT	AGAACAAGAG	AGACGTGCTA	540
AAGĀAAAGTT	GCAAGAACAA	CAAAGCGATT	TAGAACAAGA	GAGACGTGCT	AAAGAAAAGT	600
TGCAAGAGCA	GCAAAGAGAT	TTAGAACAAA	GGAAGGCTGA	TACGAAAAA	AATTTAGAAA	660
GAAAAAAGGA	ACATGGAGAT	ATATTAGCAG	AGGATTTATA	TGGTCGTTTA	GAAATACCAG	720
CTATAGAACT	TCCATCAGAA	AATGAACGTG	GATATTATAT	ACCACATCAA	TCTTCTTTAC	780
CTCAGGACAA	CAGAGGGAAT	AGTAGAGATT	CCAAGGAAAT	ATCTATAATA	GAAAAAACAA	840
ATAGAGAATC	TATTACAACA	AATGTTGAAG	GACGAAGGGA	TATACATAAA	GGACATCTTG	900
AAGAAAAGAA	AGATGGTTCA	ATAAAACCAG	AACAAAAAGA	AGATAAATCT		950

(2) INFORMATION FOR SEQ ID NO:33:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 464 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single

 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)	
(x) PUBLICATION INFORMATION:(H) DOCUMENT NUMBER: WO 92/13884(J) PUBLICATION DATE: 20-AUG-1992	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:	
SAATTCCGTG ATGAACTTTT TAATGAATTA TTAAATAGTG TAGATGTTAA TGGAGAAGTA	60
AAGAAAATA TTTTGGAGGA AAGTCAAGTT AATGACGATA TTTTTAATAG TTTAGTAAAA	120
AGTGTTCAAC AAGAACAACA ACACAATGTT GAAGAAAAG TTGAAGAAAG TGTAGAAGAA	180
ATGACGAAG AAAGTGTAGA AGAAAATGTA GAAGAAAATG TAGAAGAAAA TGACGACGGA	240
GTGTAGCCT CAAGTGTTGA AGAAAGTATA GCTTCAAGTG TTGATGAAAG TATAGATTCA	300
GTATTGAAG AAAATGTAGC TCCAACTGTT GAAGAAATCG TAGCTCCAAC TGTTGAAGAA	360
TTGTAGCTC CAAGTGTTGT AGAAAAGTGT GCTCCAAGTG TTGAAGAAAG TGTAGCTCCA	420
GTGTTGAAG AAAGTGTAGC TGAAATGTTG AAGGAAAGGA	464
2) INFORMATION FOR SEQ ID NO:34: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 988 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: DNA (genomic) (x) PUBLICATION INFORMATION: (H) DOCUMENT NUMBER: WO 92/13884 (J) PUBLICATION DATE: 20-AUG-1992 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:	
AAGTATACA TCTTCCTTCT TTACTTCTTA AAATGAAACA TATTTTGTAC ATATCATTTT	60
CTTTATCCT TGTTAATTTA TTGATATTTC ATATAAATGG AAAGATAATA AAGAATTCTG	120
AAAAGATGA AATCATAAAA TCTAACTTGA GAAGTGGTTC TTCAAATTCT AGGAATCGAA	180
AAATGAGGA AAATCACGAG AAGAAACACG TTTTATCTCA TAATTCATAT GAGAAAACTA	240
AAATAATGA AAATAATAAA TTTTTCGATA AGGATAAAGA GTTAACGATG TCTAATGTAA	300
AAATGTGTC ACAAACAAAT TTCAAAAGTC TTTTAAGAAA TCTTGGTGTT TCAGAGAATA	360
ATTCCTTAA AGAAAATAAA TTAAATAAGG AAGGGAAATT AATTGAACAC ATAATAAATG	420

ATGATGACGA TAAAAAAAA TATATTAAAG GGCAAGACGA AAACAGACAA GAAGATCTTG

AAGAAAAAGC AGCTAAAGAA AAGTTACAGG GGCAACAAAG CGATTCAGAA CAAGAGAGAC	540
GTGCTAAAGA AAAGTTGCAA GAACAACAAA GCGATTTAGA ACAAGAGAGA CTTGCTAAAG	600
AAAAGTTGCA AGAACAACAA AGCGATTTAG AACAAGAGAG ACGTGCTAAA GAAAAGTTGC	660
AAGAACAACA AAGCGATTTA GAACAAGAGA GACTTGCTAA AGAAAAGTTG CAAGAACAAC	720
AAAGCGATTT AGAACAAGAG AGACGTGCTA AAGAAAAGTT GCAAGAACAA CAAAGCGATT	780
TAGAACAAGA GAGACGTGCT AAAGAAAAGT TGCAAGAACA ACAAAGCGAT TTAGAACAAG	840
AGAGACTTGC TAAAGAAAAG TTACAAGAGC AGCAAAGCGA TTTAGAACAA GATAGACTTG	900
CTAAAGAAAA GTTGCAAGAA CAACAAAGCG ATTTAGAACA AGAGAGACGT GCTAAAGAAA	960
GGTTGCAAGA ACAACAAAGC GATTTAGA	988
(2) INFORMATION FOR SEQ ID NO:35:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 12 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: DNA (genomic)	
(x) PUBLICATION INFORMATION: (H) DOCUMENT NUMBER: WO 92/13884 (J) PUBLICATION DATE: 20-AUG-1992 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:	
ATGAACATA TT	12
(2) INFORMATION FOR SEQ ID NO:36:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 12 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
(ii) MOLECULE TYPE: DNA (genomic)	•
(x) PUBLICATION INFORMATION:(H) DOCUMENT NUMBER: WO 92/13884(J) PUBLICATION DATE: 20-AUG-1992	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:	
AAGCGATTTA GA	12
(2) INFORMATION FOR SEQ ID NO:37:	

	((A) : (B) : (C) :	NCE (LENG! IYPE: STRAI IOPOI	TH: 9 DEDI	954 cleic NESS	base c ac: : si	pai: id	rs								
	(i:	i) Mo	OLECT	JLE 7	TYPE:	DN2	A (ge	enom.	ic)								
	. (i:			RE: NAME/ LOCAT													
		. ((H) I	CATIO COCUM PUBLI	ENT	NUME	BER:	WO S	92/13 -AUG-	3884 -1992	2 · ·	٠					
				ICE E													
me t	AAA Lys D	CAT His	ATT Ile	TTG Leu 5	TAC	ATA Ile	TCA Ser	TTT Phe	TAC Tyr	Phe	ATC : Ile	CTT Leu	GTT Val	AAT Asr 15	TTA Leu	•	48
Tied	PATA VIle V	TTT Phe	CAT His	TTE	AAT Asn	GGA Gly	AAG Lys	ATA Ile 25	Ile	AAG Lys	AAT Asn	TCT Ser	GAA Glu 30	ı Lys	GAT Asp		96
GAA _Glu	:≈ TT6	ATA Ile 35	TAS	TCT Ser	AAC Asn	TTG Leu	AGA Arg 40	Ser	GGT Gly	TCT Ser	TCA Ser	AAT Asn 45	Ser	AGG Arg	AAT Asn	1	L44
Arg	ATA Lile 50	Asn	GAG Glu	GAA Glu	AAT Asn	CAC His 55	GAG Glu	AAG Lys	AAA Lys	CAC His	GTT Val 60	TTA Leu	TCT Ser	CAT His	AAT Asn	1	.92
TCA Ser 65	_	GAG Glu	AAA Lys	ACT Thr	AAA Lys 70	AAT Asn	AAT Asn	GAA Glu	AAT Asn	AAT Asn 75	AAA Lys	TTT Phe	TTC Phe	GAT Asp	AAG Lys 80	2	40
GAT Asp	AAA Lys	GAG Glu	TTA Leu	ACG Thr 85	ATG Met	TCT Ser	AAT Asn	GTA Val	AAA Lys 90	AAT Asn	GTG Val	TCA Ser	CAA Gln	ACA Thr 95	AAT Asn	2	88
TTC Phe	AAA Lys	AGT Ser	CTT Leu 100	TTA Leu	AGA Arg	AAT Asn	CTT Leu	GGT Gly 105	GTT Val	TCA Ser	GAG Glu	AAT Asn	ATA Ile 110	TTC Phe	CTT Leu	3:	36
AAA Lys	GAA Glu	AAT Asn 115	AAA Lys	TTA Leu	AAT Asn	AAG Lys	GAA Glu 120	GGG Gly	AAA Lys	TTA Leu	ATT Ile	GAA Glu 125	CAC His	ATA Ile	ATA Ile	38	84
AAT Asn	GAT Asp 130	GAT Asp	GAC Asp	GAT Asp	AAA Lys	AAA Lys 135	AAA Lys	TAT Tyr	ATT Ile	AAA Lys	GGG Gly 140	CAA Gln	GAC Asp	GAA Glu	AAC Asn	43	32
AGA Arg	CAA Gln	GAA Glu	GAT Asp	CTT Leu	GAA Glu	GAA Glu	AAA Lys	GCA Ala	GCT Ala	AAA Lys	GAA Glu	AAG Lys	TTA Leu	CAG Gln	GGG Gly	48	80

1	45					150					155	i		•		160	
G:	AA ln	CAA Gln	AGC Ser	GAT Asp	TCA Ser 165	GAA Glu	CAA Gln	GAG Glu	AGA Arg	CGT Arg 170	Ala	AAA Lys	GAA Glu	AAG Lys	TTG Leu 175	CAA Gln	528
GI GI	AA lu	CAA Gln	CAA Gln	AGC Ser 180	GAT Asp	TTA Leu	GAA Glu	CAA Gln	GAG Glu 185	Arg	CTT Leu	GCT Ala	AAA Lys	GAA Glu 190	AAG Lys	TTG Leu	576
CZ GI	AA ln	GAA Glu	CAA Gln 195	CAA Gln	AGC Ser	GAT Asp	TTA Leu	GAA Glu 200	CAA Gln	GAG Glu	AGA Arg	CGT Arg	GCT Ala 205	AAA Lys	GAA Glu	AAG Lys	624
TT Le	eu	CAA Gln 210	GAA Glu	CAA Gln	CAA Gln	AGC Ser	GAT Asp 215	TTA Leu	GAA Glu	CAA Gln	GAG Glu	AGA Arg 220	CTT Leu	GCT Ala	AAA Lys	GAA Glu	672
Ly	\G 78∑ !5_ (1)	Leu	CAA Gln	GAA Glu	CAA Gln	CAA Gln 230	AGC Ser	GAT Asp	TTA Leu	GAA Glu	CAA Gln 235	GAG Glu	AGA Arg	CGT Arg	GCT Ala	AAA Lys 240	720
GA Gl	لِيَّالِيَّا الْمُ	AAG	TTG Leu	CAA Gln	GAA Glu 245	CAA Gln	CAA Gln	AGC Ser	GAT Asp	TTA Leu 250	GAA Glu	CAA Gln	GAG Glu	AGA Arg	CGT Arg 255	GCT Ala	768
AA Ly	A. S.	GAA Glu	AAG Lys	TTG Leu 260	CAA Gln	GAA Glu	CAA Gln	CAA Gln	AGC Ser 265	GAT Asp	TTA Leu	GAA Glu	CAA Gln	GAG Glu 270	AGA Arg	CTT Leu	816
GC Al	T a C	AAA Lys	GAA Glu 275	AAG Lys	TTA Leu	CAA Gln	GAG Glu	CAG Gln 280	CAA Gln	AGC Ser	GAT Asp	TTA Leu	GAA Glu 285	CAA Gln	GAT Asp	AGA Arg	864
CT Le	u A	GCT Ala 290	AAA Lys	GAA Glu	AAG Lys	TTG Leu	CAA Gln 295	GAA Glu	CAA Gln	CAA Gln	AGC Ser	GAT Asp 300	TTA Leu	GAA Glu	CAA Gln	GAG Glu	912
AG Ar 30	g 1	GT Arg	GCT Ala	AAA Lys	GAA Glu	AGG Arg 310	TTG Leu	CAA Gln	GAA Glu	CAA Gln	CAA Gln 315	AGC Ser	GAT Asp	TTA Leu			954
(2) 3	INFO	RMAT	ION	FOR	SEO	ID N	0:38	:								

(2) INFORMATION FOR SEQ ID NO:38:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 1493 base pairs

 - (B) TYPE: nucleic acid (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: DNA (genomic)
 - (x) PUBLICATION INFORMATION:
 - (H) DOCUMENT NUMBER: WO 92/13884
 - (J) PUBLICATION DATE: 20-AUG-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

CAAGAACAAC AAAGCGATCT AGAACAAGAG AGACGTGCTA AAGAAAAGTT GCAAGAACAA	60
CAAAGCGATT TAGAACAAGA TAGACTTGCT AAAGAAAAGT TACAAGAGCA GCAAAGCGAT	120
TTAGAACAAG AGAGACTTGC TAAGAAAAGT TGCAAGAACA ACAAAGCGAT CTAGAACAAG	180
AGAGACGTGC TAAAGAAAAG TTGCAAGAAC AACAAAGCGA TTTAGAACAA GAGAGACGTG	240
CTAAAGAAA GTTGCAAGAA CAACAAAGCG ATTTAGAACA AGATAGACTT GCTAAAGAAA	300
AGTTACAAGA GCAGCAAAGC GATTTAGAAC AAGAGAGACG TGCTAAAGAA AAGTTGCAAG	360
AACAACAAAG CGATTTAGAA CAAGAGAGAC GTGCTAAGAA AAGTTGCAAG AACAACAAAG	420
CGATTTAGAA CAAGAGAGAC TTGCTAAAGA AAAGTTGCAA GAACAACAAA GCGATTTAGA	480
ACAAGAGAG CGTGCTAAAG AAAAGTTGCA AGAACAACAA AGCGATTTAG AACAAGAGAG	540
ACGTGCTAAG AAAAGTTGCA AGAACAACAA AGCGATTTAG AACAAGAGAG ACGTGCTAAA	600
GAAAAGTTGC AAGAGCAGCA AAGAGATTTA GAACAAAGGA AGGCTGATAC GAAAAAAAAT	660
TTAGAAAGAA AAAAGGAACA TGGAGATATA TTAGCAGAGG ATTTATATGG TCGTTTAGAA	720
ATACCAGCTA TAGAACTTCC ATCAGAAAAT GAACGTGGAT ATTATATACC ACATCAATCT	780
TCTTTACCTC AGGACAACAG AGGGAATAGT AGAGATTCCA AGGAAATATC TATAATAGAA	840
AAAACAAATA GAGAATCTAT TACAACAAAT GTTGAAGGAC GAAGGGATAT ACATAAAGGA	900
CATCTTGAAG AAAAGAAAGA TGGTTCAATA AAACCAGAAC AAAAAGAAGA TAAATCTGCT	960
GACATACAAA ATCATACATT AGAGACAGTA AATATTTCTG ATGTTAATGA TTTTCAAATA	1020
AGTAAGTATG AGGATGAAAT AAGTGCTGAA TATGACGATT CATTAATAGA TGAAGAAGAA	1080
GATGATGAAG ACTTAGACGA ATTTAAGCCT ATTGTGCAAT ATGACAATTT CCAAGATGAA	1140
GAAAACATAG GAATTTATAA AGAACTAGAA GATTTGATAG AGAAAAATGA AAATTTAGAT	1200
GATTTAGATG AAGGAATAGA AAAATCATCA GAAGAATTAT CTGAAGAAAA AATAAAAAAA	1260
GGAAAGAAAT ATGAAAAAAC AAAGGATAAT AATTTTAAAC CAAATGATAA AAGTTTGTAT	1320
GATGAGCATA TTAAAAAATA TAAAAATGAT AAGCAGGTTA ATAAGGAAAA GGAAAAATTC	1380
ATAAAATCAT TGTTTCATAT ATTTGACGGA GACAATGAAA TTTTACAGAT CGTGGATGAG	1440
TTATCTGAAG ATATAACTAA ATATTTTATG AAACTATAAA AGGTTATATA TTT	1493
(2) INFORMATION FOR SEC. ID NO. 20.	

(2) INFORMATION FOR SEQ ID NO:39:

⁽i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 12 base pairs

	(B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
(ii)	MOLECULE TYPE: DNA (genomic)	
(x)	PUBLICATION INFORMATION: (H) DOCUMENT NUMBER: WO 92/13884 (J) PUBLICATION DATE: 20-AUG-1992	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:39:	
CAAGAACA	AC AA	12
(2) INFO	RMATION FOR SEQ ID NO:40:	
(i) O O	SEQUENCE CHARACTERISTICS: (A) LENGTH: 12 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
	MOLECULE TYPE: DNA (genomic)	
(x)	PUBLICATION INFORMATION: (H) DOCUMENT NUMBER: WO 92/13884 (J) PUBLICATION DATE: 20-AUG-1992	
GGTTATATA	SEQUENCE DESCRIPTION: SEQ ID NO:40:	12
. 24	MATION FOR SEQ ID NO:41:	12
tanar F s	SEQUENCE CHARACTERISTICS: (A) LENGTH: 1482 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
(ii)	MOLECULE TYPE: DNA (genomic)	
(ix)	FEATURE: (A) NAME/KEY: CDS (B) LOCATION: 11482	
	PUBLICATION INFORMATION: (H) DOCUMENT NUMBER: WO 92/13884 (J) PUBLICATION DATE: 20-AUG-1992	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:41:	
CAA GAA CA Gln Glu G	AA CAA AGC GAT CTA GAA CAA GAG AGA CGT GCT AAA GAA AAG ln Gln Ser Asp Leu Glu Gln Glu Arg Arg Ala Lys Glu Lys 5 10	48

TTC	G CAA	GAA	CAA Gln 20	Glr	AGC Ser	GAT Asp	TTA Leu	GAA Glu 25	ı Glr	GAT Asp	AGA Arg	CTT J Leu	GCT Ala	Lys	GAA Glu		96
AAG Lys	TTA Leu	CAA Gln 35	Glu	CAG Gln	CAA Gln	AGC Ser	GAT Asp 40	Leu	GAA Glu	CAA Gln	GAG	AGA Arg 45	Leu	GCT Ala	AAA Lys		144
GAA Glu	AAG Lys 50	Leu	CAA Gln	GAA Glu	CAA Gln	CAA Gln 55	Ser	GAT Asp	CTA Leu	GAA Glu	CAA Glr 60	GAG Glu	AGA Arg	CGT Arg	GCT Ala		192
AAA Lys 65	Glu	AAG Lys	TTG Leu	CAA Gln	GAA Glu 70	CAA Gln	CAA Gln	AGC Ser	GAT Asp	TTA Leu 75	Glu	CAA Gln	GAG Glu	AGA Arg	CGT Arg 80		240
GCT Ala	AAA Lys	GAA Glu	AAG Lys	TTG Leu 85	Gln	GAA Glu	CAA Gln	CAA Gln	AGC Ser 90	GAT Asp	TTA Leu	GAA Glu	CAA Gln	GAT Asp 95	AGA Arg		288
CTT Leu	∏GCT _D Ala	AAA Lys	GAA Glu 100	AAG Lys	TTA Leu	CAA Gln	GAG Glu	CAG Gln 105	CAA Gln	AGC Ser	GAT Asp	TTA Leu	GAA Glu 110	CAA Gln	GAG Glu		336
AGA Arg	CGT Arg	GCT Ala 115	AAA Lys	GAA Glu	AAG Lys	TTG Leu	CAA Gln 120	GAA Glu	CAA Gln	CAA Gln	AGC Ser	GAT Asp 125	TTA Leu	GAA Glu	CAA Gln		384
G1u⁼	AGA Arg 130	CGT	GCT Ala	AAA Lys	GAA Glu	AAG Lys 135	TTG Leu	CAA Gln	GAA Glu	CAA Gln	CAA Gln 140	AGC Ser	GAT Asp	TTA Leu	GAA Glu	•	432
CAA Gln 145	≟Glu	AGA Arg	CTT Leu	GCT Ala	AAA Lys 150	GAA Glu	AAG Lys	TTG Leu	CAA Gln	GAA Glu 155	CAA Gln	CAA Gln	AGC Ser	GAT Asp	TTA Leu 160	/	480
GAA Glu	CAA Gln	GAG Glu	AGA Arg	CGT Arg 165	GCT Ala	AAA Lys	GAA Glu	AAG Lys	TTG Leu 170	CAA Gln	GAA Glu	CAA Gln	CAA Gln	AGC Ser 175	GAT Asp		528
TTA Leu	GAA Glu	CAA Gln	GAG Glu 180	AGA Arg	CGT Arg	GCT Ala	AAA Lys	GAA Glu 185	AAG Lys	TTG Leu	CAA Gln	GAA Glu	CAA Gln 190	CAA Gln	AGC Ser		576
GAT Asp	TTA Leu	GAA Glu 195	CAA Gln	GAG Glu	AGA Arg	CGT Arg	GCT Ala 200	AAA Lys	GAA Glu	AAG Lys	TTG Leu	CAA Gln 205	GAG Glu	CAG Gln	CAA Gln		624
AGA Arg	GAT Asp 210	TTA Leu	GAA Glu	CAA Gln	Arg	AAG Lys 215	GCT Ala	GAT Asp	ACG Thr	Lys	AAA Lys 220	AAT Asn	TTA Leu	GAA Glu	AGA Arg		672
AAA Lys 225	AAG Lys	GAA Glu	CAT His	Gly	GAT . Asp 230	ATA ' Ile	TTA (Leu	GCA Ala	Glu	GAT Asp 235	TTA Leu	TAT (GGT Gly	CGT Arg	TTA Leu 240		720

GAZ Glu	A ATA	A CCI	A GC	T ATA 116 245	: Glu	A CTT 1 Leu	Pro	TCA Ser	GAA Glu 250	ı Asr	GAA	A CGI	GGZ Gly	TAT Y TY: 25:	TAT Tyr	768
ATA Ile	A CCA	A CAT	CAZ Glr 260	ı Ser	TCI Ser	TTA Leu	CCT	CAG Glr 265	ı Asp	AAC Asr	AGA Arg	GGG Gly	AAT Asr 270	ı Sei	AGA Arg	816
gat Asț	TCC Ser	Lys 275	S GIV	ATA Ille	TCT Ser	ATA Ile	ATA Ile 280	Glu	AAA Lys	ACA Thr	AAT Asn	AGA Arg 285	Glu	TCT Ser	ATT Ile	864
ACA Thr	ACA Thr 290	ASI	GTI Val	GAA Glu	GGA Gly	CGA Arg 295	AGĢ Arg	GAT Asp	ATA Ile	CAT His	AAA Lys 300	Gly	CAT His	CTT Lev	GAA Glu	912
GAA Glu 305	Lys	AAA Lys	GAT Asp	GGT Gly	TCA Ser 310	ATA Ile	AAA Lys	CCA Pro	GAA Glu	CAA Gln 315	Lys	GAA Glu	GAT Asp	AAA Lys	TCT Ser 320	960
GCT Ala	j Asp	ATA Ile	CAA Gln	AAT Asn 325	CAT His	ACA Thr	TTA Leu	GAG Glu	ACA Thr 330	GTA Val	AAT Asn	ATT Ile	TCT Ser	GAT Asp 335	Val	1008
AAT Asn	GAT Asp	TTT Phe	CAA Gln 340	ATA Ile	AGT Ser	AAG Lys	TAT Tyr	GAG Glu 345	GAT Asp	GAA Glu	ATA Ile	AGT Ser	GCT Ala 350	GAA Glu	TAT Tyr	1056
GAÇ Asp	GAT Asp	TCA Ser 355	TTA Leu	ATA Ile	GAT Asp	GAA Glu	GAA Glu 360	GAA Glu	GAT Asp	GAT Asp	GAA Glu	GAC Asp 365	TTA Leu	GAC Asp	GAA Glu	1104
Pne	AAG Lys 370	CCT Pro	ATT Ile	GTG Val	CAA Gln	TAT Tyr 375	GAC Asp	AAT Asn	TTC Phe	Gln	GAT Asp 380	GAA Glu	GAA Glu	AAC Asn	ATA Ile	1152
GGA Gly 385	ATT Ile	TAT Tyr	AAA Lys	GAA Glu	CTA Leu 390	GAA Glu	GAT Asp	TTG Leu	ATA Ile	GAG Glu 395	AAA Lys	AAT Asn	GAA Glu	AAT Asn	TTA Leu 400	1200
GAT Asp	GAT Asp	TTA Leu	GAT Asp	GAA Glu 405	GGA Gly	ATA Ile	GAA Glu	AAA Lys	TCA Ser 410	TCA Ser	GAA Glu	GAA Glu	TTA Leu	TCT Ser 415	GAA Glu	1248
GAA Glu	AAA Lys	ATA Ile	AAA Lys 420	AAA Lys	GGA Gly	AAG /	Lys	TAT Tyr 425	GAA Glu	AAA Lys	ACA Thr	AAG Lys	GAT Asp 430	AAT Asn	AAT Asn	1296
TTT Phe	AAA Lys	CCA Pro 435	AAT Asņ	GAT Asp	AAA Lys	AGT :	rrg (Leu (440	TAT Tyr	GAT Asp	GAG Glu	CAT His	ATT . Ile 445	AAA Lys	AAA Lys	TAT Tyr	1344
τλε	AAT Asn 450	GAT Asp	AAG Lys	CAG Gln	Val .	AAT A Asn 1 455	AAG (Lys (GAA . Glu	AAG (Lys (Glu	AAA Lys 460	TTC A	ATA Ile	AAA Lys .	TCA Ser	1392

TTG Leu 465	Pne	CAT His	ATA Ile	TTT Phe	GAC Asp 470	GGA Gly	GAC Asp	AAT Asn	GAA Glu	ATT Ile 475	TTA Leu	CAG Gln	ATC Ile	GTG Val	GAT Asp 480	1440
GAG Glu	TTA Leu	TCT Ser	GAA Glu	GAT Asp 485	ATA Ile	ACT Thr	AAA Lys	Tyr	TTT Phe 490	ATG Met	AAA Lys	CTA Leu	TAA			1482
(2)	INF	ORMA?	rion	FOR	SEQ	ID 1	NO:42	2:								
	(i)	(I (I	1) LE 3) TY C) SI	engti Pe : Trani	HARAC H: 12 nucl DEDNE DGY:	bas eic SS:	se pa ació sino	irs I			. *					
	(ii)	MOI	ECUI	E TY	PE:	DNA	(ger	omic	:)							
	(ix)	FEA (A	TURE) NA) LO	: ME/K CATI	ŒY: ON:	CDS 11	.2		Í							
		H) (J) DO) PU	CUME	INF NT N ATIO	UMBE N DA	R: W	O 92 20-A	UG-1	992				•		
7	(xi)	SEQ	UENC	E DE	SCRI	PTIO	N: S	EQ I	D NO	:42:						
AAG Lys 1	GTT Val	ATA Ile	TAT Tyr		٠		,									12
2)	INFO	RMAT	ION	FOR :	SEQ :	ID N	0:43	:								
L	(i)	(A (B (C) LEI) TYI) STI	NGTH PE: 1 RAND	ARACT : 12 nucle EDNES	base eic a SS: s	e pa acid sing	irs					•			
	(ii)	MOLI	ECULI	E TY	PE: I	ONA	(gen	omic)							
	(x)	(H)	DOC	CUME	INFO NT NU ATION	MBEI	R: WO	92/	/1388 JG-19	34 992						
	(xi)	SEQU	JENCE	E DES	CRIE	MOIT	1: SI	EQ II	NO:	43:						
AAG	AACA	C AZ														12
2) :	INFOE	ITAMS	ON F	OR S	EQ I	D NC	:44:									
	(i)	(A) (B)	LEN TYP	GTH: E: n	RACT 12 ucle DNES	base ic a	pai cid	.rs								

(D) TOPOLOGY: linear

	(i	i) M	OLEC	ULE '	TYPE	: DN	A (g	enom	ic)							
	(:	x) P	(H)	CATIO DOCUI PUBL:	MENT	NUM	BER:	WO	92/1 -AUG	3884 -199	2				-	
	. (x	i) S	EQUE	NCE 1	DESC	RIPT:	ion:	SEQ	ID :	NO:4	4:					
AT	GAAA	CTAT	AA													12
(2) IN	FORM	ATIO	V FOI	R SE	Q ID	NO:	15:								
	(:	((A) 1 (B) 1 (C) 5	NCE (LENGT TYPE: STRAN TOPOI	H: 1 nuc	l482 :leid VESS:	base aci	pa: id	irs		.*					
	o O (i) O	L) MC	LECU	LE 1	YPE:	DNA	(ge	nomi	ic)							
	iy (ix ∀ W		A) N	E: IAME/ OCAT				<u> </u>								
		(H) - D	OCUM	ENT CATI	NUMB ON D	ER: ATE:	₩O 9 20~	AUG-	1992						
) SE														
	ËGAA ≓Glu	CAA Gln	CAA Gln	AGC Ser 5	GAT Asp	CTA Leu	GAA Glu	CAA Gln	GAG Glu 10	Arg	CGT Arg	GCT Ala	AAA Lys	GAA Glu 15	AAG Lys	48
TTG Leu	CAA Gln	GAA Glu	CAA Gln 20	CAA Gln	AGC Ser	GAT Asp	TTA Leu	GAA Glu 25	CAA Gln	GAT Asp	AGA Arg	CTT Leu	GCT Ala 30	AAA Lys	GAA Glu	96
AAG Lys	TTA Leu	CAA Gln 35	GAG Glu	CAG Gln	CAA Gln	AGC Ser	GAT Asp 40	TTA Leu	GAA Glu	CAA Gln	GAG Glu	AGA Arg 45	CTT Leu	GCT Ala	AAA Lys	144
GAA Glu	AAG Lys 50	TTG Leu	CAA Gln	GAA Glu	CAA Gln	CAA Gln 55	AGC Ser	GAT Asp	CTA Leu	GAA Glu	CAA Gln 60	GAG Glu	AGA Arg	CGT Arg	GCT Ala	192
AAA Lys 65	GAA Glu	AAG Lys	TTG Leu	CAA Gln	GAA Glu 70	CAA Gln	CAA Gln	AGC Ser	GAT Asp	TTA Leu 75	GAA Glu	CAA Gln	GAG Glu	AGA Arg	CGT Arg 80	240
GCT Ala	AAA Lys	GAA Glu	AAG Lys	TTG Leu 85	CAA Gln	GAA Glu	CAA Gln	CAA Gln	AGC Ser 90	GAT Asp	TTA Leu	GAA Glu	CAA Gln	GAT Asp 95	AGA Arg	288



									0,5							
CT'	r GC u Al:	T AA a Ly	A GAZ S Glu 100	и гл.	G TTA S Leu	A CAA	GAC Glu	G CAC I Gli 105	ı Glr	A AGC	GAT As	r TT? p Le	GAZ Gli Gli 110	ı Gl	A GAG n Glu	336
AG/ Arc	A CG	F GC J Al	а Lys	A GAZ S Glu	T LYS	TTG Lev	CAA Glr 120	ı Glu	CAA 1 Glr	CAA n Gln	AGO Sei	GAT R Asp 125) Le	A GAZ 1 Gl	A CAA 1 Gln	384
GAC Glu	AGA i Arq 130	J Ar	r GCT g Ala	AA/ Lys	A GAA s Glu	AAG Lys 135	Leu	CAA Glr	GAA Glu	CAA Gln	CAA Glr 140	ı Ser	GAT Asp	TTA	GAA 1 Glu	432
CAA Glr 145	ı GIL	AGA L Arc	A CTI J Leu	GCI Ala	AAA Lys 150	Glu	AAG Lys	TTG Leu	CAA Gln	GAA Glu 155	Glr	CAA Glr	AGC Ser	GAT Ası	TTA Leu 160	480
GIU	CAP Glr	GAC	AGA 1 Arg	CGT Arg	, Ala	AAA Lys	GAA Glu	AAG Lys	TTG Leu 170	Gln	GAA Glu	CAA Glm	CAA Glm	AGC Ser 175	Asp	528
TTA		CAA Glr	GAG Glu 180	Arg	CGT Arg	GCT Ala	AAA Lys	GAA Glu 185	Lys	TTG Leu	CAA Gln	GAA Glu	CAA Gln 190	Gln	AGC Ser	576
GAT Asp	TTA Leu	GAA Glu 195	CAA Gln	GAG Glu	AGA Arg	CGT Arg	GCT Ala 200	AAA Lys	GAA Glu	AAG Lys	TTG Leu	CAA Gln 205	GAG Glu	CAG Gln	CAA Gln	624
Arg	GAT Asp 210	Leu	GAA Glu	CAA Gln	AGG Arg	AAG Lys 215	GCT Ala	GAT Asp	ACG Thr	AAA Lys	AAA Lys 220	Asn	TTA Leu	GAA Glu	AGA Arg	672
AAA Lys 225	TIVS	GAA Glu	CAT His	GGA Gly	GAT Asp 230	ATA Ile	TTA Leu	GCA Ala	GAG Glu	GAT Asp 235	TTA Leu	TAT Tyr	GGT Gly	CGT Arg	TTA Leu 240	720
GAA Glu	ATA Ile	CCA Pro	GCT Ala	ATA Ile 245	GAA Glu	CTT Leu	CCA Pro	TCA Ser	GAA Glu 250	AAT Asn	GAA Glu	CGT Arg	GGA Gly	TAT Tyr 255	TAT Tyr	768
ATA Ile	CCA Pro	CAT His	CAA Gln 260	TCT Ser	TCT Ser	TTA Leu	CCT Pro	CAG Gln 265	GAC Asp	AAC Asn	AGA Arg	GGG Gly	AAT Asn 270	AGT Ser	AGA Arg	816
GAT Asp	TCC Ser	AAG Lys 275	GAA Glu	ATG Met	TCT Ser	Ile	ATA Ile 280	GAA Glu	AAA Lys	ACA Thr	AAT Asn	AGA Arg 285	GAA Glu	TCT Ser	ATT Ile	864
ACA Thr	ACA Thr 290	AAT Asn	GTT Val	GAA Glu	СТĀ	CGA Arg 295	AGG Arg	GAT Asp	ATA Ile	His	AAA Lys 300	GGA Gly	CAT His	CTT Leu	GAA Glu	912
GAA Glu 305	AAG Lys	AAA Lys	GAT Asp	GGT Gly	TCA Ser 310	ATA . Ile	AAA Lys	CCA Pro	Glu	CAA / Gln 315	AAA Lys	GAA Glu	GAT Asp	AAA Lys	TCT Ser 320	960



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GCT GAC ATA CAA AAT CAT ACA TTA GAG ACA GTA AAT ATT TCT GAT GTT 1008 Ala Asp Ile Gln Asn His Thr Leu Glu Thr Val Asn Ile Ser Asp Val 330 AAT GAT TTT CAA ATA AGT AAG TAT GAG GAT GAA ATA AGT GCT GAA TAT 1056 Asn Asp Phe Gln Ile Ser Lys Tyr Glu Asp Glu Ile Ser Ala Glu Tyr 345 GAC GAT TCA TTA ATA GAT GAA GAA GAT GAT GAA GAC TTA GAC GAA 1104 Asp Asp Ser Leu Ile Asp Glu Glu Glu Asp Asp Glu Asp Leu Asp Glu 360 TTT AAG CCT ATT GTG CAA TAT GAC AAT TTC CAA GAT GAA GAA AAC ATA 1152 Phe Lys Pro Ile Val Gln Tyr Asp Asn Phe Gln Asp Glu Glu Asn Ile GGA ATT TAT AAA GAA CTA GAA GAT TTG ATA GAG AAA AAT GAA AAT TTA 1200 Gly Ile Tyr Lys Glu Leu Glu Asp Leu Ile Glu Lys Asn Glu Asn Leu 385 390 395 GAT GAT TTA GAT GAA GGA ATA GAA AAA TCA TCA GAA GAA TTA TCT GAA 1248 Asp Asp Leu Asp Glu Gly Ile Glu Lys Ser Ser Glu Glu Leu Ser Glu 405 410 1296 Glukkys Ile Lys Lys Gly Lys Lys Tyr Glu Lys Thr Lys Asp Asn Asn 420 TTT: AAA CCA AAT GAT AAA AGT TTG TAT GAT GAG CAT ATT AAA AAA TAT 1344 Phe Lys Pro Asn Asp Lys Ser Leu Tyr Asp Glu His Ile Lys Lys Tyr AAA AAT GAT AAG CAG GTT AAT AAG GAA AAG GAA AAA TTC ATA AAA TCA 1392 Lys Asn Asp Lys Gln Val Asn Lys Glu Lys Glu Lys Phe Ile Lys Ser 455 TTG TTT CAT ATA TTT GAC GGA GAC AAT GAA ATT TTA CAG ATC GTG GAT 1440 Leu Phe His Ile Phe Asp Gly Asp Asn Glu Ile Leu Gln Ile Val Asp 465 470 GAG TTA TCT GAA GAT ATA ACT AAA TAT TTT ATG AAA CTA TAA 1482 Glu Leu Ser Glu Asp Ile Thr Lys Tyr Phe Met Lys Leu 485 490

(2) INFORMATION FOR SEQ ID NO:46:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 12 base pairs
 - (B) TYPE: nucleic acid (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: DNA (genomic)
- (ix) FEATURE:
- (A) NAME/KEY: CDS

(B) LOCATION: 1..12

(x) PUBLICATION INFORMATION:

- (H) DOCUMENT NUMBER: WO 92/13884
- (J) PUBLICATION DATE: 20-AUG-1992
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

AAG GTT ATA TAT Lys-Val Ile Tyr 12